



JOURNAL OF THE
RESEARCH CENTER FOR EDUCATIONAL TECHNOLOGY

KENT STATE
UNIVERSITY

www.rcetj.org

Volume 3, Number 2
Fall 2007

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Podcasting with Kids: Differentiating Instruction Digitally

Karen McClain

Highland Elementary School, Stow-Munroe Falls City Schools

Theresa Boyle, Margie Franks, Barb Komoff

Crestwood Intermediate School, Crestwood Local Schools

Annette Kratcoski

Research Center for Educational Technology

Abstract

This vignette describes how teachers at two elementary schools utilized podcasts to differentiate instruction for children with special needs. Special needs and at-risk students were exposed to curriculum units, via podcasts, prior to the actual introduction of the units in the regular education setting. The vignette demonstrates the effectiveness of podcasting for individualizing learning.

The Project

The importance of accessing and building on students' schema has been well documented for all learners (Bransford, Brown, & Cocking, 2000). Students with special needs often have difficulty making meaning of new information. As new curriculum units are introduced in the classroom, students with learning difficulties require a scaffold to help them access background knowledge, to make connections from the known to the new, and to emphasize key terms and details. In the reading and literacy fields, "frontloading" is frequently discussed as an effective strategy for facilitating understanding by providing information in the form of vocabulary and concepts (Hoyt, 2003). Typically, teachers use frontloading to introduce the vocabulary or new unit before it becomes a formal unit of study. In that way, students are familiar with the vocabulary used in the unit. Teachers use frontloading to introduce key ideas to students, pique their curiosity, activate their relevant background knowledge, and focus their attention on essential elements and details. Frontloading can also be used to extend or challenge students by setting the tone for an upcoming unit of study. When designed and implemented effectively, frontloading activities can provide a framework to support and organize student use of new concepts and strategies (McCall, 2005).

During the 2006-07 school year, we explored the use of podcasts as a way to frontload information with special needs students. The design of the project was threefold:

- to familiarize students with key terms and concepts prior to introduction of the material;
- to provide individualized learning; and,
- to provide enrichment and extended learning.

The project was implemented at two elementary schools:

Highland Elementary School, Stow-Munroe Falls City Schools (by Karen McClain)

During the 2006 – 2007 school year, I taught an elementary special education class comprised of 6 girls and 4 boys, ages 7 – 10. Seven of the students were diagnosed with specific learning disabilities, one child as other health impaired, one as autistic, and one with cognitive disabilities. Six of the children were also diagnosed with language disabilities and received services from the speech/language pathologist. Six of the students received special education services for reading and written expression. One student received special education services for math. The other three students received services for reading, written expression, and math. All of the students were mainstreamed for social studies and science.

One of the greatest challenges I face each school year is to keep learning exciting and interesting for my special needs students. The children will often spend two to four years in my special education (resource) classroom. Therefore, each year I try to incorporate ideas, especially technologies, that will motivate and challenge the students and that will offer new experiences even though my classroom routine remains similar from year to year.

I had previously used personal digital assistants (PDAs) with my students. They adapted very well to the devices, so I began to investigate MP3 Players (iPods) and how I could incorporate them into my classroom as an educational tool. I found that these devices were capable of storing and playing pages and pages of information as audio and video files. They were similar in size to the PDA's. I hoped that if I presented curriculum on a device that was portable and 'trendy' the students would be excited about learning!

First I had to become educated about how an iPod works. I soon discovered that the students would need to make podcasts, so we took a podcasting class. Together with the teachers we were mentoring, we decided to focus on the weather unit.

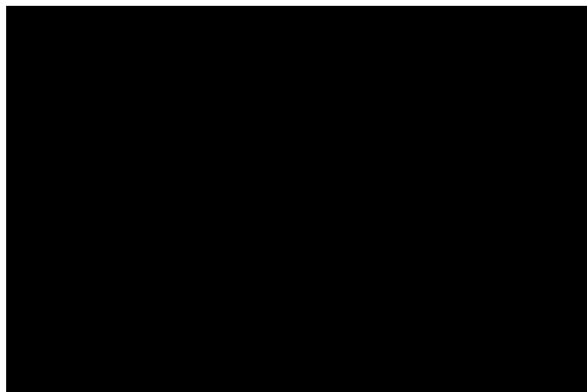
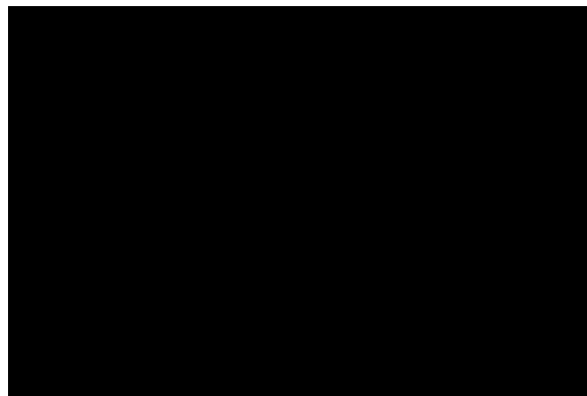
To create the content for the podcasts, we found material in the library that had a reading level that matched the students' reading abilities, but also contained information that matched the fourth grade state standards in science. We also researched specific web sites that offered accurate and age appropriate information. The students were given a broad list of weather words. They selected words that they knew or sounded interesting to them. (hurricane, sleet, thunder, rainbow, etc.). Their first project was to find the selected word in the library materials and write a four sentence paragraph that explained the word. Using Inspiration software, the students were able to expand their four sentences into a sort of Readers' Theater script with their weather information. Our first graders were in charge of searching for illustrations to accompany the scripts and were not satisfied with being limited to this task. They really wanted to make their own podcasts so we adapted the project a bit for their ability level. Eventually, they produced "Henny Penny" as their contribution to this project. It fit very well with the weather unit. Henny Penny felt an acorn fall from the sky, but as one child pointed out, "It could have been hail!" (Click box to play video)



As the students worked on their scripts, either alone or in pairs, they conducted experiments, watched weather forecasts, and made weather tools (rain gauges, weather vanes) They began to talk about weather accurately, but in their own words. They took ownership of the knowledge and they became teachers to each other. The actual reading practice became a homework assignment and the parents listened to the readers. The illustrations came from three sources. Some were clipart from a commercial software package. One student videotaped a snowstorm from our classroom window. Some students photographed drawings that they made. Children who have great difficulty putting information in the form of writing were able to select or create the illustrations. It was important to us that everyone would have a role in the creation of the podcasts, regardless of their limitations.

We decided to use "Garage Band" to create the final podcasts. The children easily adapted to the process and were able to create a number of casts focusing on specific weather topics such as wind and rain.

(Click boxes to play videos)



Results

We recently began a new school year and seven of my last year's students have returned to my resource room. One of the first questions asked was, "What kind of podcasts are we making this year?" I took the opportunity to ask questions about the topics the children researched for the weather podcasts. It soon

Journal of the Research Center for Educational Technology (RCET)
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became obvious that the children retained almost all of the information they researched. They now own weather information.

The students' writing skills increased, as their purpose for writing extended to the podcast rather than just a written report. The students wrote with a new focus and with the end result being the podcast. Their parents joined in by helping them proofread. While I encourage the parents to help in this way, there seemed to be a greater effort to make the writing more accurate.

I also grew as a teacher. I designed reading lessons using the science material rather than using solely the reading curriculum. The reading vocabulary was generally at a higher reading level, but at the conversational level of the children I found new ways to engage the children in meaningful conversations about the weather. Our conversations were similar to those I would have with friends about the weather. It was encouraging to me to be able to have these conversations and to know that the students truly understood what they were saying. They drew conclusions and discussed cause and effect in a new way. My greatest challenge was to locate materials that would challenge the children's reading and writing, but would not discourage them.

Conclusions

We were excited to be the first and only students to use podcasting and iPods in our building. The Resource Room students were able to describe their podcasts to their non-disabled peers and in return gain some recognition for doing something others have not tried. It may seem like a minor event to some, but to a child who has experienced difficulty, or in some cases failure in the academic environment, having recognition for a project such as this boosts self-esteem and instills confidence for the children. Additionally, several teachers have asked how they could become involved in a podcasting project. We are hoping to develop podcasts that cover more science units and eventually work on social studies concepts. In fact, during a recent discussion with a colleague, we brainstormed a list of over twenty topics for podcasts that would be beneficial to elementary students.

Clearly, podcasting can play a powerful role in motivating students and supporting learning. We found podcasting to be an effective and innovative way to frontload new information for students who have learning difficulties, providing a scaffold to support understanding and comprehension.

Crestwood Intermediate School, Crestwood Local Schools (by Theresa Boyle)

Our project was implemented during the 2006-07 school year with two intermediate elementary classes (ages 9-11). Theresa and Barb co-taught an inclusion class with 24 students comprised of 11-boys and 12-girls. Nine of those students were diagnosed with Specific Learning Disabilities. One student was classified as autistic, another student with cognitive delay and another with other health impairment. Two students were identified as gifted and another student was receiving speech-language services. Marge's class had 26 students with 12 boys and 14 girls. Three students were receiving intervention for math and writing. Two students were receiving speech-language services and two students were identified as gifted.

With such a diverse group of learners, we needed an effective way to address their varying needs and abilities. We decided to focus on frontloading as we needed a way to provide repetition of terms and concepts as well as a strategy to introduce and then reinforce vocabulary used in our weather unit. Through a grant awarded by the Ohio Learning Network's Learning Community Initiative, Theresa was serving as a mentor for our team, focusing on how we could better integrate technology into our classrooms. Having recently been introduced to podcasting at a workshop, we decided to explore the use of that technology to facilitate frontloading with our students.

The work of creating the podcasts was very collaborative in nature. There were opportunities for all students to participate meaningfully. Initially, the podcasts were created in teams of four and the work was divided among the students. At first, students tended to pick tasks that they were comfortable with. However, as soon as the students began working, lines blurred and regardless of abilities levels, all students were sharing information and ideas.

Results

Across the project, we observed tremendous impact on our students' motivation, attitude toward learning, and comprehension. Students eagerly looked forward to science as they were very motivated to create and use the podcasts. During the creation process, they were highly engaged and wanted to share ideas with one another. All work and aspects of the project were carefully completed. Participation in the group work and project seemed to boost the self-esteem of our students. Most importantly, our students showed a high degree of comprehension of the topic and related concepts.

The [completed podcasts](#) were used in multiple ways to support and extend learning. At times the podcasts were used individually by students or shared in small groups to introduce new material and to review specific concepts. The podcasts were also shared with our parents at the end of the school year. Our students were so highly motivated and impressed with their own accomplishments as well as the work of their peers, that they wanted to invite their parents to school to see the final projects. Needless to say, our parents were very impressed.

The project has not only impacted our students, but we have noted teacher changes as well. As a result of the project, technology became more important to us as a teaching tool as we experienced firsthand the ways that digital tools could be used to facilitate learning and motivate our students. There has also been a major impact on our building. Not only have several of our fourth grade team members worked hard to include more technology in their classrooms, but other grade level teachers have come to us asking "How did you do this?" In response, we paired some of our students as "technology mentors" to students in our colleagues' classes. Many teachers are excited about working on grants or finding other forms of funding to buy materials and tools for their classrooms to begin to integrate technology more.

Conclusions

With our students, podcasting proved to be a successful way of frontloading new content and material with students who have learning difficulties. Further, using podcasts to support learning also helped to stimulate questions and build interest in the topic with students who often are difficult to "hook" as new units are introduced in the curriculum.

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